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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/500,789 | 04/11/2005 | Yutaka Awajiya | 04433/LH | 8484 |
| 1933 | 7590 | 12/24/2008 | EXAMINER | |
| FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708 | | | KASTLER, SCOTT R | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1793 | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 12/24/2008 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/500,789 | AWAJIYA ET AL. | |
| | Examiner | Art Unit | |
| | Scott Kastler | 1793 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 01 December 2008.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 36-45,47-49,52-57,60-65 and 68-80 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 36-38,47-49,52-57,60-65 and 68-76 is/are allowed.

6) Claim(s) 39,42-45 and 77-80 is/are rejected.

7) Claim(s) 40 and 41 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/24/2008, 10/16/2008.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) Notice of Informal Patent Application

6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 39, 42-45 and 77-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura et al in view of Kato et al and Hattanda et al. Nomura et al, in the embodiments of either the claims or at table 1 for example, teach immersion nozzles and methods of casting steel including refractories with some desulphurization ability meeting the requirements of the instant claims except the inclusion of a powdered metal interior of the immersion nozzle or the introduction of gas for the desulphurization of the molten steel into the sidewall of the nozzle.

Kato et al teaches that it was known in the art at the time the invention was made to both introduce an inert gas and metallic Ca into the molten steel within the immersion nozzle for reduced clogging (see col. 1 lines 40-60 for example). Hattanda et al teaches that it was known in the art at the time the invention was made to employ Ar gas as an injection gas for injection into immersion nozzles. Because Nomura et al also desires reduced clogging in it's immersion nozzle, motivation to employ the powdered Ca metal and injected Ar gas of each of Kato et al and Hattanda et al in the system of Nomura et al, where the Ca and gas would result in a Ca gas evolving in the sidewall of the nozzle, would have been modifications obvious to one of ordinary skill in the art at the time the invention was made.

Allowable Subject Matter

Claims 36-38, 47-49, 52-57, 60-65 and 68-76 allowed.

Claims 40 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments, see the response, filed 12/1/2008, with respect to amended claims 36-38, 47-49, 52-57, 60-65 and 68-76 have been fully considered and are persuasive. The rejections of these claims have been withdrawn.

Applicant's arguments filed on 21/1/2008 with respect to claims 39, 42-45 and 77-80 however have been fully considered but they are not persuasive. Applicant's argument that the sited references do not teach supplying a desulfurizing gas to the side wall of the nozzle as instantly required, but rather supply Ar, which is not a desulfurizing gas is not persuasive at least because as stated above, the applied combination of references teaches that it would have been obvious at the time the invention was made to supply Ar gas with Ca to the interior of the nozzle, where Ca gas (a desulfurizing gas) would evolve. This is also the exact mechanism for supplying the desulfurizing gas recited in instant claim 42 for example.

Further, applicants recite newly presented claims 80-84, however, no new claims have been presented.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Scott Kastler/
Primary Examiner, Art Unit 1793

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